

CLAIM AMENDMENTS

(Amendments to PCT Amended Claims)

1. (Currently Amended) System comprising bar-elements (4,125,126) ~~joined or~~ joinable to form a truss (5), and connecting elements (1,14,21,34,38,52) ~~inserted or~~ insertable between these bar-elements (4,125,126) at ~~all such joint places,~~ junctures where two or more bar-elements ~~meet~~ whose longitudinal axes are not coaxial to each other are joined, ~~whereby wherein~~
  - a) ~~the each of said~~ bar-elements (4,125,126) consists of at least one ~~segment~~ portion of a material selected from high-growing plants ~~each~~, and
  - b) ~~the each of said~~ connecting elements (1,14,21,34,38,52) consists of a selected rigid, regenerative material; and ~~characterised in that wherein~~
  - c) at least one end of a bar-element (4,125,126), a connecting element (1,14,21,34,38,52) which is to be mounted to said bar-element, and/or ~~the~~ at least one end of a further bar-element (4,125,126) which is to be connected to said connecting element, are treated ~~such that they to~~ exhibit surfaces running along well-defined configured as geometrical bodies at least in selected areas,

- d) such that at ~~the~~ a joint between ~~a~~ the bar-element (4,125,126) and ~~a~~ the connecting element or ~~a~~ the further bar-element (1,14,21,34,38;4,125,126), each of ~~both bodies~~ the elements (4,125,126;1,14,21,34,38,52) exhibits at least in a selected area a surface which runs along the surface (11;76) generated by a selected one of a cylinder, a cone, a prism ~~or~~ and a pyramid, as well as at least in another selected area a surface (11;75) which ~~runs along~~ is configured as a selected one of a hollow cylinder, a hollow cone, a hollow prism and~~/~~or a hollow pyramid, respectively,
- e) which surfaces permit an assembly by plugging together with closely adjoining surfaces which are complementary to each other and suitable for locking ~~by clamping and/or glueing like a fit together.~~

2. (Currently Amended) System according to claim 1,  
~~characterised in that~~ wherein the joint between ~~a~~ the bar-element (4,125,126) and ~~a~~ the connecting element or ~~a~~ the further bar-element (1,14,21,34,38;4,125,126) ~~is designed as~~ comprises a plug-connection (30).

3. (Currently Amended) System according to claim 1 or 2,  
~~characterised in that wherein~~ that the joint between a the  
bar-element (4,125,126) and a the connecting element or a the  
further bar-element (1,14,21,34,38;4,125,126) ~~is designed as~~  
comprises a selected one of a clamping (21,34) ~~or~~ and a glueing  
(1,14,38) connection.

4. (Currently Amended) System according to claim 3,  
~~characterised in that wherein~~ for mounting a the bar-element  
(4,125,126) by clamping, a core (23) ~~at~~ of the connecting  
element or ~~at~~ the further bar-element (1,14,21,34,38;4,125,126)  
~~is designed to be~~ spreadable and therefore said core ~~can~~ is  
adapted to be pressed against ~~the~~ an inside (76) of the  
bar-element (4,125,126).

5. (Currently Amended) System according to claim 4,  
~~characterised in that wherein~~ an element (31) widening conically  
or like the frustum of a pyramid, is ~~pushed or pulled~~ moved into  
an inner, ~~preferably~~ centric cut-out (13) of said core (23), for  
spreading the core (23).

6. (Currently Amended) System according to claim 5,  
~~characterised in that~~ wherein at least one of the connecting  
element ~~or~~ and the further bar-element (1,14,21,34,38;4,125,126)  
exhibits a cut-out (13) penetrating the core (23) in which ~~the a~~  
shaft of a ~~screw~~ (27), ~~of a bolt or the like~~ fastener can be  
inserted to pull an element (31) with widening cross-section  
into the core (23).

7. (Currently Amended) System according to ~~one of the~~  
~~claims 4 to 6 characterised in that~~ claim 1 wherein the  
connecting element (34) exhibits an annular shape (35), so that  
the cut-outs (13) for the insertion of a screw-like spreading  
element (27,31) can extend up to the inside (37) of the ring  
(35), in order to apply a threaded element or other clamping  
element at this location.

8. (Currently Amended) System according to ~~one of the~~  
~~previous claims, characterised in that~~ claim 1 wherein the  
connecting element (1,52) exhibits a discoidal shape, e.g. with  
a circular or ring-shaped, or a triangular, quadrilateral or  
hexagonal base (7,53).

9. (Currently Amended) System according to ~~one of the previous claims, characterised in that claim 1 wherein~~ one connecting element (1,14,21,34,38,52) exhibits at least one surface area of ~~econeave shape, in particular~~ a shape which ~~approximately generally~~ corresponds to a part of ~~the~~ a lateral surface of a hollow cylinder, for connecting to the shaft of a bar-element (4,125,126).

10. (Currently Amended) System according to ~~one of the previous claims, characterised in that claim 1, wherein~~ at least one bar-element (4,125,126) exhibits a shaft milled to a round shape at its outer surface.

11. (Currently Amended) System according to ~~one of the previous claims, characterised in that claim 1 wherein~~ a bar-element (4,125,126), which is to be inserted between two connecting elements (1,14,21,34,38,52), exhibits a ~~principally similar structure at both of its ends, i.e. at both ends thereof~~ the surfaces (11;76) ~~running along~~ configured as a selected one ~~of a cylinder, a cone, a prism or and a pyramid are arranged~~

either within or without, respectively, of the surfaces (11;75), which ~~run along~~ are configured as a selected one of a hollow cylinder, a hollow cone, a hollow prism and/or a hollow pyramid in a selected area.

12. (Currently Amended) System according to ~~one of the previous claims, characterised in that claim 1 wherein a~~ bar-element (4,125,126), which is to be inserted between two other bar-elements (4,125,126), exhibits a ~~principally~~ different structure at both of its ends, *i.e.* at one end the surface (11;76) ~~running along~~ being a selected one of a cylinder, a cone, a prism or a pyramid ~~is~~ arranged within the surface (11;75), which runs along a selected one of a hollow cylinder, a hollow cone, a hollow prism and/or a hollow pyramid in a selected area, and at the other end ~~this is~~ arranged the other way round.

13. (Currently Amended) System according to ~~one of the previous claims, characterised in that claim 12, wherein the~~ bar-elements (4,125,126) consist of tubes.

14. (Currently Amended) Process to produce a truss (5)  
from bar-elements (4,125,126), which are to be joined, and from  
connecting elements (1,14,21,34,38,52), which are to be placed  
between these bar-elements at all such joint places, where two  
or more bar-elements meet whose longitudinal axes are not  
coaxial to each other, whereby wherein

- a) the ~~rod-like~~ bar-elements (4,125,126) are made from at least one segment of a material from high-growing plants each, as well as and
- b) the connecting elements (1,14,21,34,38,52) consist of a rigid, regenerative material,  
characterised in that wherein
- c) at least one end of a bar-element (4,125,126), a connecting element (1,14,21,34,38,52) which is to be mounted to said bar-element, and/or the end of a further bar-element (4,125,126) which is to be connected, are treated such that they exhibit surfaces running along well-defined geometrical bodies at least in selected areas,
- d) such that at the joint between a bar-element (4,125,126) and a connecting element or a further bar-element (1,14,21,34,38,4,125,126), each of both element bodies

(4,125,126;1,14,21,34,38,52) exhibits at least in a selected area a surface which runs along the surface (11;76) generated by a cylinder, cone, prism or a pyramid, as well as at least in another selected area a surface (11;75) which runs along a hollow cylinder, hollow cone, hollow prism and/or hollow pyramid respectively,

e) and that surfaces (11;75) processed in such a way are assembled by plugging them together with closely adjoining surfaces which are complementary to each other and suitable for locking ~~by clamping and/or glueing like a fit together.~~

15. (Currently Amended) Process according to claim 14, characterised in that wherein the bodies and/or the surfaces of the parts (4,125,126;1,14,21,34,38,52) which are to be connected are processed by ~~ablating, particularly by cutting.~~

16. (Currently Amended) Process according to claim 14 or 15, characterised in that wherein both ends (73) of a bar-element (4,125,126) are processed ~~in such a way,~~ that the (longitudinal) symmetry axes of the processed areas (75;76) are in line with each other.

17. (Currently Amended) Process according to ~~one of the~~ claims 14 through 16, ~~characterised in that~~ wherein slots (24), which are preferably parallel to the longitudinal axis of the concerned plug-connection (3), are placed in an area, which adjoins the lateral surface (11) of a connecting element or a further bar-element (1,14,21,34,38,52;4), in order to facilitate a radial spring-like movement of {areas 25 of} the concerned generated surface (11).

18. (Currently Amended) Process according to claim 17, ~~characterised in that~~ wherein a spreading element (31) is inserted in a bore (13), which is parallel or coaxial to the a longitudinal axis of a plug-connection (3), in order to permit pressure ~~being to be~~ exerted in the direction of (areas 25 of) the generated surface (75) at the end of a bar-element (4) which is to be connected.

19. (Currently Amended) Process according to ~~one of the~~ claims 14 ~~to 18~~, ~~characterised in that~~ wherein the bar-elements (4,125,126) are glued or clamped to the connecting elements or

further bar-elements (1,14,21,34,38,52;4,125,126) after plugging  
(30) ~~them~~ the elements together.

20. (Currently Amended) Process according to ~~one of the~~  
claims 14 ~~to 19~~, ~~characterised in that~~ wherein connecting  
elements (38) are used as end pieces along ~~the~~ a longitudinal  
edge of the truss (5), which are connectable to a foundation  
(41), a ceiling, and a roof ~~or the like~~.

21. (Currently Amended) Process according to ~~one of the~~  
claims 14 ~~to 20~~, ~~characterised in that~~ wherein a panelling ~~or~~  
~~the like~~ is attached at the connecting elements  
(1,14,21,34,38,52) of the truss (5).

22. (Currently Amended) Process according to ~~one of the~~  
claims 14 ~~through 21~~, ~~characterised in that~~ wherein bamboo culms  
(4) are used as the bar-elements, whose inner and/or outer  
lateral surfaces (75,76) at the culms' ends (73) are processed.

23. (Currently Amended) Process according to claim 22,  
~~characterised in that~~ wherein the lateral ~~surfaee(s)~~ surfaces

(75, 76) of the end (73) of a bamboo culm are processed ~~in~~ such a way, that the wall-thickness of the culm (4) is equal to or less than a predetermined wall-thickness.

24. (Currently Amended) Process according to ~~one of the claims 22 through 23, characterised in that wherein~~ potentially present diaphragms (nodes) in the bamboo culm (4) are pierced or otherwise made passable ~~otherwise~~.

25. (Currently Amended) Process according to ~~one of the claims 22 through 24, characterised in that wherein~~ holes (13) are drilled into a connecting element (1, 14, 21, 34, 38, 52), which lead into a surface area (12) covered by ~~the~~ a face-side of an attached bamboo culm (4), ~~in such a way,~~ that said holes join within the connecting element (1, 14, 21, 34, 38, 52) in order to obtain a link between ~~the~~ cavities of the attached bamboo-culms (4).

26. (Currently Amended) Process according to claim 25, ~~characterised in that, wherein~~ during ~~the~~ creation of the lateral surfaces (75, 76) at a connection-element which can be

plugged together with a bamboo culm (4), the cavity-joining holes (13) drilled into the connection-element (1,14,21,34,38,52) are used as a tool-guiding guide.

27. (Currently Amended) Apparatus to produce a truss (5) from bar-elements (4,125,126), which are to be joined, and from connecting elements (1,14,21,34,38,52), which are to be placed between the bar-elements at ~~all such~~ joint places, where two or more bar-elements meet whose longitudinal axes are not coaxial to each other, ~~by carrying out the process according to one of the claims 14 through 26, characterised by wherein~~ at least one tool (56,113) ~~designed as an ablating tool, in particular as comprising~~ a cutting tool, for machining at least one connecting element (1,14,21,34,38,52) made from a rigid, regenerative material and/or the ends (73) of bar-elements (4,125,126) made from at least one segment of a material from high-growing plants each, which are to be mounted to said connecting element or to one another, in such a way that they obtain surfaces (10,11;75,76) which run along well-defined geometrical bodies at least in selected areas, whereby at the processed body (4,125,126;1,14,21,34,38,52) in the area of the a joint of a

bar-element (4,125,126) with a connecting element (1,14,21,34,38) there is formed simultaneously a ~~surface which runs along~~ the lateral surface (11;76) configured as a selected one of a cylinder, a cone, a prism or and a pyramid at least in selected areas as well as a surface (11;75) ~~which runs along~~ configured as a selected one of a hollow cylinder, a hollow cone, a hollow prism and or a hollow pyramid at least in selected areas, respectively.

28. (Currently Amended) Apparatus according to claim 27, comprising at least one tool (113) for processing the ends (73) of a bar-element (4,125,126), ~~characterised by~~ the tool comprising a device (84) for clamping a bar-element (4,125,126) in such a way that both of its ends(73) are ~~as~~ substantially parallel respectively and concentrically as possible aligned to with a longitudinal axis of the processing apparatus (74).

29. (Currently Amended) Apparatus according to claim 28, ~~characterised by~~ wherein there is provided a device (108) at each end of the clamping device (84) for holding and/or mounting of a processing-tool (113).

30. (Currently Amended) Apparatus according to ~~one of the claims 27 through 29, characterised by~~ wherein there is provided a device (111) to guide the processing tools (113) or their holdings (108) respectively in ~~the~~ a feeding direction along the longitudinal axis of the processing apparatus (74).

31. (Currently Amended) Apparatus according to ~~one of the claims 27 through 30, characterised by~~ claim 28, wherein there is provided at least one cutting tool in the shape of a milling head (113) for machining ~~the~~ lateral surfaces (73) at the ends of the bar-elements (4, 125, 126), ~~which is designed to process the inner and the outer surfaces (75, 76) of a bar-element (4, 125, 126), in particular a bamboo culm,~~ simultaneously.

32. (Currently Amended) Apparatus according to claim 27, and further comprising at least one tool (56) for machining a connecting element (1, 14, 21, 34, 38, 52), ~~characterised by its design as a~~ wherein the tool (56) is adapted for rotating around an axis (57), with a cutting edge for creating a cavity (9) of rotational symmetry with defined cross-sectional area.

33. (Currently Amended) Apparatus according to claim 32,  
~~characterised in that~~ the wherein a cutting region is arranged  
at a peripheral boundary surface (64) which surrounds a  
centrical guiding device (60).

34. (Currently Amended) Apparatus according to claim 33,  
~~characterised in that~~ wherein the centrical guiding device (60)  
is ~~designed as~~ a drill, so that the guiding drill-hole (13) and  
the plugging cavity (9) can be produced in one work step.